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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,803	07/22/2003	Toyofumi Hayashi	393032039600	6651

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EXAMINER

LAMB, CHRISTOPHER RAY

ART UNIT	PAPER NUMBER
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2627

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/624,803

Applicant(s)

HAYASHI, TOYOFUMI

Examiner

Christopher R. Lamb

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 10 and 17 are objected to because of the following informalities: both claims end in "and." Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (JP 2002-203321; US 2002-0191517 is relied upon as a translation) in view of Izumi et al. (US 5,859,824).

Regarding claim 10:

Honda discloses:

An apparatus (Fig. 6) for recording data and a visible image on an optical disk having at least a substrate surface, a label surface opposite to the substrate surface, a recording face interposed between the substrate surface and the label surface, and a reflection layer disposed under the recording face, the recording face being irradiated by a laser light through the substrate surface to record and reproduce data (paragraph 30), the apparatus comprising:

a light source for generating the laser light (paragraph 38);

an optical pickup having an objective lens, said objective lens movable in a direction of a thickness of the optical disk within a total movable range and condensing the laser light to form a light spot for irradiating the optical disk (a lens is part of the optical pickup of Fig. 6: 66; the pickup has a focus control servo as per paragraph 38, so it can move in the claimed direction);

an actuator for moving the objective lens (the focus servo, Fig. 6: 76) around a first base point for focusing the light spot onto the recording face (it can focus on the recording layer for recording data, paragraphs 37-38, so it must be able to focus at this point) and for moving the objective lens around a second base point for focusing the light spot onto a label surface (it can focus on the label surface, paragraph 38, so it must be able to move around this second base point);

a feed means for moving the optical pickup in a radial direction of the optical disk (Fig. 6: 72);

a spindle motor for rotationally driving the optical disk (Fig. 6: 56); and

a host computer for controlling the recording of the data and the visible image (Fig. 6: 46),

wherein the substrate surface of the optical disk faces to the optical pickup when the data is recorded into the recording face (standard for CD-R/RW, and Honda does not change this),

wherein the label surface of the optical disk faces to the optical pickup when the visible image is recorded into the label surface (paragraph 5),

wherein a distance between the objective lens and the optical disk is differentiated between a first case of recording the data on the recording face and a second case of recording the visible image on the label surface (it must be: paragraph 10 discloses that when printing a label, the light is focused on the reflection layer from the label side; in order to record as per a standard CD-R/RW, the light must be focused on the reflection layer from the data side; as seen in Fig. 1, there are different distances to the reflection layer from each side, and therefore the lens must be a different distance from the disc for each recording operation),

wherein the apparatus further comprises a focus servomechanism, said focus servomechanism including the actuator and for focusing the laser light onto the optical disk by means of the objective lens (paragraph 38),

wherein the total movable range of the objective lens is set to be equal to or more than a sum of an allowance range and an additional range (not explicitly disclosed, but inherent, as follows), the allowance range including a range set to allow the objective lens to keep a constant distance between the objective lens and the recording face when a level of the optical disk varies in the direction of the thickness (the focus servo keeps the focus during label printing, as per paragraph 10, 37, 38, so it must have at least this range), the additional range being set by dividing a distance from the substrate surface to the recording face of the optical disk by an absolute refraction index of the substrate of the optical disk, so that the actuator can switch the objective lens between the first base point and the second base point (it can focus both during recording and label printing, and as discussed above, since the label and the data

recording layer are at different depths inside the disc, the lens must be able to move far enough to allow this: the difference is just the difference in optical path length between the two depths, and that is simply the distance of the substrate surface to the recording face divided by the refractive index when there is no protective layer on the label printing side, and Honda discloses there may not be a protective layer in paragraph 65).

Honda does not disclose:

that a gain of the focus servomechanism is switched between the first case of recording the data on the recording face and the second case of recording the visible image on the label surface.

Izumi discloses:

the gain of a focus servomechanism should be switched between the first case of recording data on one recording face and the second case of recording data on the second recording face (column 1, line 66 to column 2, line 7). Izumi discloses that if the gain is not switched, servo control cannot be performed accurately.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Honda wherein the gain of the focus servomechanism is switched between the first case of recording the data on the recording face and the second case of recording the visible image on the label surface.

The rationale is as follows:

Izumi discloses accurate servo control requires changing the gain between recording faces; the data layer and the label layer of Honda are two different recording

faces. Izumi's recording faces are a different sort, but the explanation Izumi provides is equally applicable to Honda.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Honda in view of Katsuyama et al. (US 4,723,234).

Honda discloses an apparatus for recording data and a visible image on an optical disk: most elements of this claim have been identified in Honda in the rejection of claim 10 above.

Honda does not disclose:

"wherein the host computer checks if the label surface of the optical disk is set to face the optical pickup when the optical disk is set."

Katsuyama discloses checking to see if the label surface of the optical disk is set to face the optical pickup when the optical disk is set; Katsuyama discloses that this avoids focusing malfunctions (column 1, lines 19-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Honda as taught by Katsuyama to include wherein the host computer checks if the label surface of the optical disk is set to face the optical pickup when the optical disk is set.

The motivation would be to avoid malfunctions, as taught by Katsuyama (Katsuyama is trying to avoid malfunctions while playing the disk, because it cannot be played with the label side the wrong way, but the extension to Honda is obvious: the label cannot be recorded if the label side is set the wrong way).

Response to Arguments

5. Applicant's arguments filed January 28th, 2007, with respect to the 112, first paragraph, rejection of claims 10 and 17 have been fully considered and are persuasive. The 112, first paragraph, rejection of claims 10 and 17 has been withdrawn.

However, Applicant's amended claims are now rejected as unpatentable over Honda in view of Izumi or Honda in view of Katsuyama as noted above.

Since this was the basis for the rejections in an earlier (but not the most recent) Office Action, Applicant made some arguments with respect to this prior art. Those arguments are not persuasive.

Specifically, Applicant first argues that although the focus distances for data and label-writing may be different in Honda, Honda does not disclose two different "base points" for recording and label writing. Applicant argues that having different base points assists the focus control process.

When Honda first focuses on, e.g., the label surface, it performs focus control to focus on the layer. As the disc rotates, if the thicknesses are uneven or the disc wobbles, the focus servo will keep the light in focus. This means that the lens moves up and down. At the center of this range of motion, there must be a "base point" that the lens is oscillating around as the focus servo is performed. Honda does not need to specifically calculate this base point for this to be true: as focus is maintained, the lens moves around some sort of center point.

If Applicant, in their invention, uses their base point in a specific way that assists the focusing process, as they allege in their arguments, they are welcome to claim the

details of this assistance. Honda does not disclose calculating or using a base point to assist in focusing: nonetheless a point that the lens moves around is a natural consequence of the focus servo itself, and so Honda does meet the current language of the claim.

Applicant also argues that Honda does not disclose "configuring the movable range based on an additional range which is calculated in the specific manner shown above," i.e., by dividing the substrate thickness by its index of refraction.

Honda does not specifically disclose this, but it is inherent to Honda, because it is necessary for Honda to function. All this claim language says is that the total moveable range of the objective lens has to be big enough that the lens can move around to maintain the focus on a specific layer, and also large enough to allow it to focus on both the data layer and the label area.

The data layer and the label area are at different depths inside the disc. The data layer has the substrate between it and the lens; the label doesn't. The optical path length of the substrate is just its thickness divided by its refractive index, and therefore Honda's lens must be able to move at least that far if it can focus on both the data layer and the label layer.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Lamb whose telephone number is (571) 272-5264. The examiner can normally be reached on 9:00 AM to 5:30 PM Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art
Unit 2627

CRL 4/21/08